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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,277	12/12/2003	Hong-Da Liu	MR2707-52	8233
4586	7590	06/28/2005		
ROSENBERG, KLEIN & LEE 3458 ELLICOTT CENTER DRIVE-SUITE 101 ELLICOTT CITY, MD 21043			EXAMINER SCHECHTER, ANDREW M	
			ART UNIT 2871	PAPER NUMBER
DATE MAILED: 06/28/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,277

Applicant(s)

LIU, HONG-DA

Examiner

Andrew Schechter

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 2,6,8-15 and 19-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7 and 16 is/are rejected.
- 7) ☒ Claim(s) 17 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- or --Related Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 3-5, and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 2871

Claim 1 recites "a pixel electrode" which is shown as element 214 in Fig. 6, for instance. The term "pixel electrode" is a term of art in the LCD area which refers to (for non-parallel field devices as in this case) an electrode receiving a voltage from a switching element and producing an electric field directly affecting the liquid crystal, while also defining the size and shape of the pixel region. The examiner has reason to suspect that element 214 as disclosed in the specification and recited as "a pixel electrode" in the claims is not such a pixel electrode. First, if it were a pixel electrode, then the purpose of the transparent conductors [206] above them is mysterious. (These appear to be the conventional "pixel electrodes".) Second, the pixel electrode in Fig. 6 electrically shorts the red, green, and blue sub-pixels to each other, so they can only be turned on or off together, which is unusual. It appears possible to the examiner that the element 214 is intended to be a schematically drawn semiconductor layer for instance, with three separate switching elements (not shown) controlling three separate pixel electrodes [206]. Is this the case, or should the specification, figures, and claims be taken at face value? For examining purposes, it is assumed that the latter is the case. Accordingly, the examiner notes that the "pixel electrode" cannot be a part of a switching element, a polysilicon or amorphous silicon layer, a source or drain electrode, or other intermediate electrode layer, but must act as a pixel electrode, taking a potential from a switching element and creating an electric field which affects the liquid crystal, while defining the size and shape of the pixel region.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 16 is rejected under 35 U.S.C. 102(b) as being anticipated by *Nakamura et al.*, U.S. Patent No. 6,124,911.

Nakamura discloses [see Figs. 3 and 9, for instance] a method for an LCOS display to reflect an incident light at an incident angle to an output light at an output angle, the method comprising the steps of: refracting the incident light to a first light at a first angle [at the surface of 19]; reflecting the first light to a second light at a second angle by a plurality of oblique reflectors [16]; and refracting the second light to the output light [at the surface of 19 again]. Claim 16 is therefore anticipated.

Allowable Subject Matter

7. Claims 17 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 1, 3-5, and 7 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

9. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose the device of claim 1, in particular the limitations that the pixel structure for an LCOS display has a pixel electrode, an insulator, a plurality of reflectors, a passivation layer formed on the reflectors, and a transparent conductor formed on the passivation. Note the discussion of the "pixel electrode" given above.

The prior art does not disclose the method of claim 17, in particular the additional limitation that first-third wavelength components of the light are respectively reflected by first-third groups of reflectors having the reflective surface oblique at third-fifth angles, respectively. In *Nakamura*, for instance, all the wavelength components of the light are reflected by reflectors having the reflective surfaces at the same oblique angle. Claim 17 would therefore be allowable if rewritten appropriately.

The prior art does not disclose the method of claim 18, in particular the additional limitation that the step of reflecting the first light comprises diffracting the first light. Claim 18 would therefore be allowable if rewritten appropriately.

Election/Restrictions

10. Applicant's election without traverse of species A1, B1, and C2 in the reply filed on 6 May 2005 is acknowledged.


11. Claims 2, 6, 8-15, and 19-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on 6 May 2005.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (571) 272-2302. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Andrew Schechter
Primary Examiner
Technology Center 2800
22 June 2005